

**Oroville Facilities Relicensing Efforts  
Environmental Work Group  
Draft Narrative Reports for PM&E Discussion**

**Resource Action:** EWG-59

**Task Force Recommendation Category:** 2

**MODIFY RECREATION USE PATTERNS AT THE THERMALITO FOREBAY AND  
THERMALITO AFTERBAY TO MINIMIZE ADVERSE AFFECTS TO SENSITIVE  
WILDLIFE SPECIES**

**Date of Field Evaluation:** February 2002 through March 2004

**Field Evaluation Team:** Dave Bogener

**Description of Potential Resource Action:**

This Resource Action contains two actions designed to minimize or avoid recreational impacts to sensitive wildlife species or sensitive life stages including vernal pool invertebrates and nesting waterfowl.. Relicensing studies have identified potentially adverse impacts associated with;

- Off-Road Vehicle (ORV) use in vernal pool habitats at the Thermalito Afterbay and Forebay
- Recreational disturbance of upland habitats around the Thermalito Afterbay during the waterfowl nesting season

ORV impacts to vernal pool habitats can degrade habitat for three invertebrate species protected under the federal Endangered Species Act. Of the 253 vernal pools identified within the project boundary, about 23 percent currently exhibit degradation due to ORV use. ORVs can damage vernal pools by disruption of overland flow patterns and from direct habitat destruction. The weight of vehicles can crush or displace fairy and tadpole shrimp when present during the wet season or destroy eggs or cysts in the summer. The compacted soils in the resulting tire ruts are unsuitable for sustainability of the vernal pool ecology, affecting the growth of aquatic plants and algae. During federal Endangered Species Act Section 7 consultation process, DWR and USF&WS identified several conservation measures to minimize ORV impacts on vernal pool habitats including; area vehicular closures, signage, patrol, enforcement, and barrier maintenance.

DFG currently limits recreational use of waterfowl nesting habitats around the Thermalito Afterbay between March 15 and June 15 to minimize disturbance and associated abandonment or predation of waterfowl nests or young. This Resource Action is a continuation of this existing seasonal closure. Relicensing evaluations indicate that additional protective measures (beyond these seasonal closures) are not currently required to limit recreational disturbance of nesting waterfowl.

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**Nexus to Project:**

The Thermalito Afterbay and Forebay support significant recreational use on a year-round basis. Recreational facilities and uses are generally compatible with wildlife management objectives. However, to ensure federal Section 7 ESA compliance additional conservation measures are required to protect vernal pool habitats.

DFG manages lands around the Thermalito Afterbay in support of the goals and objectives of the Central Valley Joint Habitat Venture, a regional program to improve waterfowl habitat and production. DWR is also a signatory to the CVJHV.

**Potential Environmental Benefits:**

Implementation of conservation measures to limit ORV use in vernal pool habitats would serve to limit soil erosion or compaction and associated vegetative disturbance in the vernal pool habitats and adjacent uplands. These basic resource protection measures would serve to minimize resource degradation and maintain or enhance habitat diversity, a key component of wildlife species diversity.

Seasonal recreational closure of waterfowl nesting areas around the Thermalito Afterbay would serve to maintain current levels of waterfowl production. Furthermore, these seasonal recreational closures limit impacts on other wildlife species including several State or federal Species of Concern (northern harrier, black-shouldered kite, loggerhead shrike, burrowing owl, short-eared owl, western pond turtle, double-crested cormorant, black-crowned night heron, American bittern, osprey, California horned lark, yellow warbler, and tri-colored blackbird).

**Potential Constraints:**

Limiting future use of ORVs in vernal pool areas may prove difficult as virtually all of the resource damage observed occurred in areas already closed to ORV use. No loss of legal recreational ORV use will occur as a result of this Resource Action.

Continuation of the existing seasonal recreational closure around the Thermalito Afterbay will not restrict recreational use beyond historic levels..

**Existing Conditions in the Proposed Resource Action Implementation Area:**

About 253 vernal pools totaling 18.3 acres are present within the FERC project boundary. Detailed mapping of vernal pool locations is presented in Relicensing Study Report T-2 (DWR 2004b). Over half of the pools occur in two clusters located near the south end of Wilbur Road or near the South Thermalito Forebay boat ramp. Indications of ORV damage to vernal pools was identified at 57 pools (22.5 percent). State lands are currently fenced, posted, and patrolled to limit ORV use and resource damage. Cutting

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of the boundary fence to facilitate illegal ORV entry onto State lands is perceived as the principal entry point for illegal ORV use.

DFG has historically planted an average of 60 to 70 acres of waterfowl nest cover enhancement plots in upland areas around the Afterbay. These plantings can provide suitable nesting cover for several years with annual fertilization. As much as 300 acres may be in suitable nesting cover during any nesting season. These habitat improvement plots are widely scattered throughout the more upland areas surrounding the Afterbay. Areas immediately adjacent to Afterbay (within 200 feet) are rarely planted as the soils are generally too moist to allow equipment access.

**Design Considerations and Evaluation:**

Conservation measures developed in coordination with USF&WS for the protection of vernal pool habitats include;

- Regular inspection of boundary fence lines in areas containing vernal pools and timely repair of damaged fences to limit ORV access.
- Public educational signage in closed areas.
- Regular patrol and enforcement of vernal pool areas to restrict ORV use.
- Placement of additional fencing or barriers to further restrict ORV access to vernal pools as needed.
- Annual inspection of vernal pools to evaluate the success of conservation measures
- Annual reporting of resource damage to vernal pool habitats.

Seasonal closure of waterfowl nesting areas requires signage at major public access points and near nest cover enhancement plots. Signage should inform/educate the public on the reasons for the closure and the temporal extent of the closure (March 15 through June 15). Further, patrol and enforcement are required to effectively implement seasonal closures. This is ongoing resource protection measure that has proven successful at limiting recreational disturbance of nesting waterfowl and other wildlife species.

**Synergism and Conflicts:**

The Resource Action related to minimization of ORV damage to vernal pool habitats will work synergistically with other conservation measures developed in cooperation with USF&WS to avoid or minimize adverse affects to vernal pool habitats including

- Abandon and revegetate all roads (in vernal pool areas) which are no longer required for project operations or maintenance
- Gravel existing unpaved roads to limit sedimentation into vernal pools

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- Construct and evaluate several sediment trapping methods to limit sediment discharge from roads into vernal pools
- Design and conduct earthmoving activities to limit sediment discharge into vernal pools
- Limit soil disturbance within 100 feet of vernal pools
- Limit, to the extent practicable, use of pesticides within 200 feet of vernal pools
- Periodically inspect vernal pools to evaluate the success of conservation measures
- Annually report to USF&WS on the success of conservation measures.

This Resource Action is designed to limit currently illegal ORV use and would conflict with any recreation related Resource Action which require additional public vehicular access in areas containing vernal pools.

DFG, DWR, and the California Waterfowl Association have worked cooperatively over the last 15 years to improve waterfowl habitat and production within the Afterbay portion of the Oroville Wildlife Area. This Resource Action will work synergistically with several other waterfowl related Resource Actions to improve waterfowl habitat and production including;

- EWG-56 brood pond construction
- EWG-68A brood pond recharge
- EWG -57A waterfowl nest cover enhancement
- EWG 58A wood duck nest box program
- EWG 57B Waterfowl forage enhancement

This Resource Action could conflict with recreation related Resource Actions which advocate additional recreational development o spring recreational use of upland areas around the Afterbay.

**Uncertainties:**

A high degree of uncertainty of success exists related to protection of vernal pools from ORV damage. Public education/signage will serve to inform the public of area vehicular closure. However, regular patrol, enforcement, and fence maintenance will be required to limit ORV entry into closed areas. If illegal ORV use and entry cannot be prevented through these means, adaptive management involving more permanent barriers or more active enforcement may be required.

Seasonal waterfowl area closures have historically been relatively successful in limiting human entry and disturbance of nesting waterfowl and other species.

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**Cost Estimate:**

Cost estimate for implementation of the Resource Action to limit ORV entry and damage is estimated at \$10,000 to \$20,000 per year during the first 5 years. If the Resource Action does not substantially reduce ORV damage during the first 5 years of implementation costs could be substantially higher.

Implementation of the waterfowl seasonal area closure would cost about \$5,000 to \$10,000 per year for signage and enforcement.

**Recommendations:**

Within the federal Section 7 ESA consultation process, USF&WS has identified these conservation measures to limit ORV damage to vernal pools. Federal ESA compliance requires implementation of these measures.

The existing seasonal closure of waterfowl nesting areas has served to limit waterfowl nesting disturbance and abandonment within this portion of the OWA. Wildlife management is the primary land use within the OWA balanced with appropriate recreational use and development. DWR recommends the continuation of seasonal recreational closures in support of the primary designated use of these lands.

**Literature Cited:**

DWR, 2004a. Final Report SP-T1: Effects of Project Operations and Features on Wildlife and Wildlife Habitat.

DWR, 2004b. Final Report SP-T2: Project Effects on Special Status Wildlife Species